first court cases involving uncontrolled hazardous waste site; 250 parties involved; $25 million cleanup ... Cleanup decision on eliminate lead-containing drinking water coolers ... 1989 EPA announces Toxic Release Inventory (TRI) database ... EPA

HEALTHY ECOSYSTEMS

Surface waters, wetlands, forests and prairies of Region 7 provide nationally significant habitat and environmental conditions essential to the survival and diversity of the rich variety of plant and animal species. These habitat areas, and the associated indigenous and migratory species, form Region 7's ecological resources.

Region 7 covers several eco-regions, including the dry, short-grass and mid-grass prairies of the western and central Great Plains, the tall grass prairie areas of the Flint Hills and western Corn Belt plains regions, the forested hills of the Ozark Highlands and the alluvial plains of the Missouri and Mississippi Rivers. Region 7 contains portions of two North American migratory waterfowl pathways, the Mississippi and the Central Flyways.

The principal factor affecting regional ecological resources is loss of habitat, particularly the physical destruction of habitat through land conversion to agricultural uses. Other factors include stream channel modification, river navigation, flood control, diversion of streamflow for irrigation, mining activities, and roadway construction. Increasingly, conversion of natural areas and "old stage" agricultural lands to urban development causes habitat loss. Although agricultural development and corresponding land conversion have slowed during the past decade, agricultural production continues to impact ecological resources.

Historically, the dry climate of western Kansas and Nebraska "preserved" much of the natural prairie as rangelands. However, development of the region's water resources for irrigation has increased conversion of rangeland. During the past three decades, the use of agricultural pesticides and fertilizers has increased significantly. These chemicals may contaminate water and land resources, and affect biological diversity through direct toxicity or subtle changes to the balance of plants and animals.

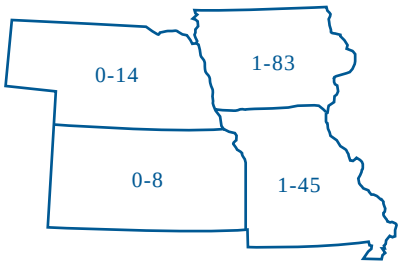
Wetlands provide essential habitat for many plant and animal species and are areas of transition between land and water. They are the vital link between the dry, upland areas and permanent, deeper waters. Water levels may fluctuate from day to day, season to season, year to year. The amount and duration of water reaching a wetland has a significant influence on the type of vegetation that will grow. This affects the function and value of a wetland to humans and other creatures. Because wetlands possess characteristics of land and water, they are ideal for creatures which dwell in both habitats.

More than three million acres of wetlands in Region 7 are adjacent to rivers and streams, in isolated forests, in fields and meadows, along ponds and lake edges. Although there is no typical wetland type, there are wetland types occurring in Region 7 that are similar in nature and functions because of a common water source, a soil type, or historic formation pattern.

Some wetland types in Region 7 include: prairie potholes, wet prairies, scrub-shrub wetlands, playa lakes, fens, bogs, bottomland hardwood wetlands, and forested wetlands. These wetlands range from under an acre to thousands of acres. Water depths can be as shallow as saturated soil to standing water six feet deep. Water levels vary throughout the year.

Between the mid-1950s and the mid-1970s, wetland loss in the United States was due to filling and draining for agricultural and urban development. Iowa has lost more than 89 percent of its wetlands and Missouri more than 87 percent. These two states rank third and fourth among U.S. states in wetland losses. Nebraska and Kansas have seen fewer historical wetland losses. Recent national surveys indicate that although the percentage of wetland loss to agriculture is decreasing, our wetlands continue to be degraded. Many Region 7 wetlands have been impaired because of hydrologic modification, nonpoint source runoff from agricultural lands, and contamination with toxic materials such as metals and pesticides.

Bald Eagle Pairs
1982 vs. 1998



In addition to wetland resources, two of the largest U.S. rivers, the Mississippi and the Missouri, are located within Region 7. The Missouri River is the longest river in the United States, and the Mississippi River drainage area encompasses 40 percent of the lower 48 states. Both rivers have vast areas of associated wetlands. The Platte River in Nebraska is also an important resource in Region 7. This unique braided, multi-channeled prairie river supports several endangered species, including the remaining population of whooping cranes.

The important river systems in Region 7 have been altered greatly due to channelization, levees and impoundments. Today, the Missouri River is one-third the size and two-thirds as fast as it was when Lewis and Clark made their voyage of discovery. The Mississippi River channel has become so separated from its flood plain (through flood control measures) that the river's ability to cleanse itself of nutrients has been reduced. This has contributed to the low oxygen zone in the Gulf of Mexico.

Wetlands in the Nebraska Sandhills.

The values of the wetlands, rivers and streams in Region 7 are numerous. For example, wetlands reduce flooding by temporarily storing water and releasing it slowly, which reduces flood peaks. The importance of this function of wetlands became particularly compelling during the Great Midwest Flood of 1993, which was the most devastating flood in modern U.S. history, costing more than $20 billion in damages.

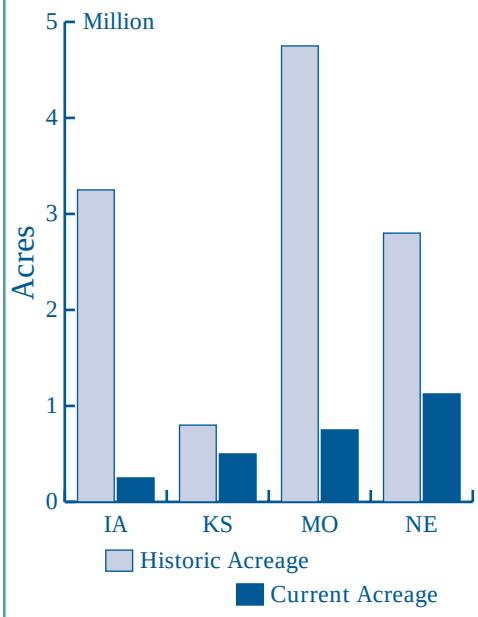
Wetlands influence groundwater discharge and recharge; influence local and regional weather and climate; maintain water quality by filtering pollutants; reduce shoreline erosion; and provide important

streamlines and strengthens EPA's ability to prevent and respond to catastrophic spills ... Pollution Prevention Act passed to (CAA) amendments set timetables for reduction of acid rain, ozone layer depleting chemicals and other toxic air pollutants ...

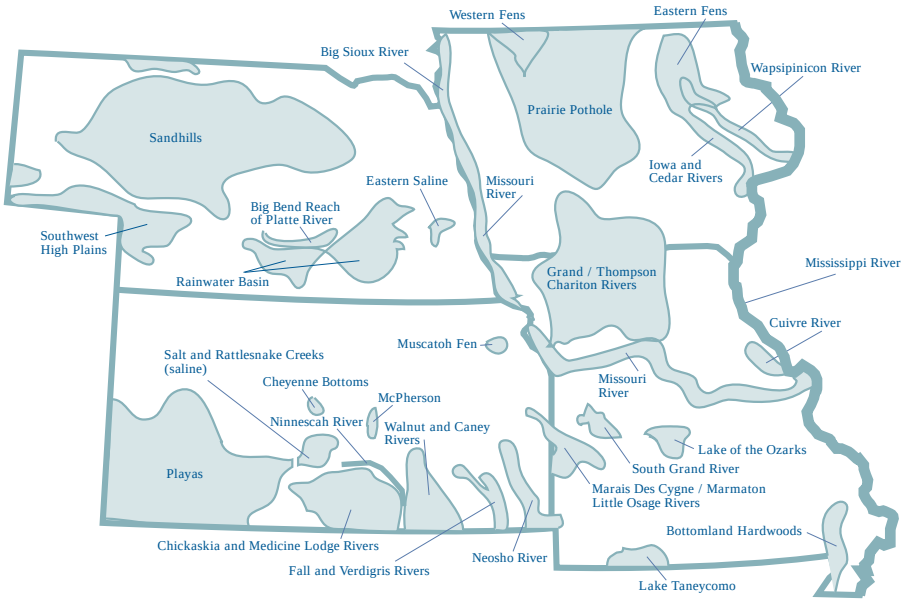
habitat for a variety of plants and animals, many of which are threatened or endangered. Wetlands provide recreation, hiking, birdwatching, hunting and fishing. Further, because of the presence of water and a large amount of dissolved nutrients, freshwater wetlands are among the most productive ecosystems on the planet.

Rivers and streams are vital to the ecological and economic health of Region 7. Major cities, such as St. Louis, Omaha and Kansas City, grew up along the rivers. Streams and rivers provide recreation, a means for transporting millions of dollars of goods a year, a source for municipal water supplies, and habitat to support fish and wildlife.

Wetland Losses in Region 7



Major Wetland Regions



In 1994 and 1995, Region 7, with the states of Nebraska, Kansas and Missouri, executed the first Regional Environmental Monitoring and Assessment Program (ReMAP) study, "Estimating the Status of the Health of Fisheries in EPA Region 7." This was the first in a series of Region 7 ReMAP projects. The study determined the health status, or quality, of the stream fisheries in Region 7 and established baseline data which could be used to assess long-term trends in stream fishery health.

Hillsdale Lake

Hillsdale Lake is a federal reservoir near Olathe, Kansas. In the mid-1990s, a group of citizens living in its watershed became concerned over levels of nutrients, and turbidity. They formed the Hillsdale Water Quality Project. To develop a long-term management plan for improvements, members turned to Region 7 for assistance. Regional specialists served as consultants.

Water quality is holding its own in the face of increased suburban development.

Citizens' action with assistance of a Region 7 team lead to reducing turbidity and high nutrients in Hillsdale Lake, near Olathe, Kansas.

promote cost-effective reduction of pollution at the source ... National Environmental Education Act is passed ... Clean Air Act

1992 Residential Lead-Based Paint Reduction Act changes focus to hazards management ... EPA promulgates regulations to